

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

**In re Application of:**

<b>Application No.:</b>	10/567,562	<b>Examiner:</b>	Lee D. Wilson
<b>Filing Date:</b>	February 8, 2006	<b>Art Unit:</b>	3727
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<b>For:</b>	<b>CLAMP APPARATUS</b>		

**APPEAL BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an appeal brief filed pursuant to the applicant's appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1 and 6-9 in the above identified application.

The filing of this appeal brief is made within two months of the filing of the Notice of Appeal and is therefore timely.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee of record: KOSMEK LTD. (Hyogo, Japan).

**II. RELATED APPEALS AND INTERFERENCES**

A notice of appeal was filed in commonly assigned U.S. application no. 10/572,576 on June 19, 2009.

A notice of appeal was filed in commonly assigned U.S. application no. 10/575,904 on December 18, 2008.

A notice of appeal was filed in commonly assigned U.S. application no. 10/565,503 on December 10, 2008.

A notice of appeal was filed in commonly assigned U.S. application no. 10/570,892 on August 1, 2008.

**III. STATUS OF CLAIMS**

**A. Status of Claims in Proceeding**

Claims 1-13 are currently pending in the above-identified application.

Claims 1 and 6-9 are rejected under 35 U.S.C. § 103(a).

Claims 2-5 and 10-13 are withdrawn.

**B. Identification of Appealed Claims**

The applicant chooses to appeal from the rejection of claims 1 and 6-9.

Claims 6-9 depend from claim 1, and their patentability is based on their dependency from claim 1 and their individually recited features.

A copy of all the pending (non-withdrawn) claims as presented in the last entered amendment dated September 25, 2008 is included in the attached Claims Appendix.

**IV. STATUS OF AMENDMENTS**

There are no outstanding amendments to the claims. The last amendment to the claims was filed on September 25, 2008, and appears to have been entered. The Office action dated October 23, 2008 is responsive to the communication, including the amendment to the claims, filed on September 25, 2008.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

For the purposes of appeal, the rejections of claims 1 and 6-9 are appealed.

**A. Independent claim 1**

Pending claim 1 requires a clamping apparatus having a central pillar (12; Figs. 3(a), 3(b), 4; paragraphs [0007], [0049], [0079]) projected from a reference member (2; Fig. 3(a); paragraphs [0007], [0049]) so as to be inserted into a hole (5; Figs. 3(a), 3(b), 4; paragraphs [0007], [0049]) opened in a movable member (3; Figs. 3(a), 3(b), 4; paragraphs [0007], [0049]).

The central pillar (12) is provided with an inclined outer surface (13; Figs. 3(a), 3(b), 4; paragraphs [0007], [0050], [0079]) that tapers toward a leading end of the central pillar (12; Figure 3(a); paragraphs [0007], [0050]).

An annular intermediate member (15; Figs. 3(a), 3(b), 4; paragraphs [0007], [0051]) defining a circumference in which at least a part of the circumference is allowed to deform in both an expanding direction and a contracting direction is arranged at the outside of the inclined outer surface (13; Figs. 3(a), 3(b), 4; paragraphs [0007], [0051], [0079]), the intermediate member (15) is provided with a straight outer surface (16; Figs. 3(a), 3(b), 4; paragraphs [0007], [0053]) allowed to fit to an inner peripheral surface of the hole (5) and with an inclined inner surface (17; Figs. 3(a), 3(b), 4; paragraphs [0007], [0053]) facing the inclined outer surface (13; paragraphs [0007], [0053]).

A pull member (21; Fig. 3(a); paragraph [0007], [0055], [0056]) is axially movably inserted into the central pillar (12; paragraph [0007], [0055]), and the pull member (21) is connected to the intermediate member (15) substantially at all times in a manner to prevent relative axial movement between the pull member (21) and the intermediate member (15; Fig. 3(a); paragraph [0007], [0055], [0056]).

A lock arrangement and a release arrangement are provided in the reference member (2; Fig. 3(a); paragraphs [0007], [0057]), the lock arrangement moves the intermediate member (15) via the pull member (21) toward a base end for locking and

the release arrangement moves the intermediate member (15) via the pull member (21) toward the leading end for releasing (Fig. 3(a); paragraphs [0007], [0057], [0062], [0068]).

A fluid flow hole (38; Figs. 3(a), 3(b), 4; paragraphs [0007], [0009], [0059], [0060]) is opened in the straight outer surface (16) of the intermediate member (15), and when the intermediate member (15) moves for locking and the straight outer surface (16) comes into close contact with the inner peripheral surface of the hole (5; Fig. 4; paragraphs [0007], [0009], [0053], [0058], [0059], [0062], [0065], [0083]), the fluid flow hole (38) is closed by the inner peripheral surface of the hole (5; Fig. 4; paragraphs [0007], [0009], [0059], [0060], [0065], [0083]).

B. Dependent claims

Pending claim 6 requires the clamping apparatus as discussed above with respect to claim 1 and further includes a plurality of fluid flow holes (38; Figs. 3(a), 3(b), 4; paragraphs [0018], [0020], [0078], [0080], [0082], [0083]).

Pending claim 7 requires the clamping apparatus as discussed above with respect to claim 6 and further requires the plurality of fluid flow holes is provided circumferentially (38; Figs. 3(a), 3(b), 4; paragraphs [0018], [0020], [0078], [0080], [0082], [0083]).

Pending claim 8 requires the clamping apparatus as discussed above with respect to claim 1 and further includes a housing (9; Fig. 3(a); paragraphs [0019], [0047], [0060]) provided in the reference member (2; Fig. 3(a); paragraphs [0019], [0047], [0060]) which is provided with a fluid port (39; Fig. 3(a); paragraphs [0019], [0060], [0074], [0076], [0084]) for supplying pressurized fluid or discharging fluid (paragraphs [0074], [0076], [0084]).

A fluid passage (40; Figs. 3(a), 3(b), 4; paragraphs [0019], [0020], [0060], [0081]) is provided inside the housing (9; Fig. 3(a); paragraphs [0019], [0020], [0060], [0081]) and the fluid passage (40) is connected to the fluid port (39; Fig. 3(a); paragraphs [0019], [0020], [0060], [0081]).

The fluid passage (40) is also provided with a relay opening (41; Figs. 3(a), 3(b), 4; paragraphs [0019], [0060], [0079], [0081]) in the inclined outer surface (13) of the central pillar (12; Figs. 3(a), 3(b), 4; paragraphs [0019], [0060], [0079], [0081]).

The fluid flow hole (38) is provided so that a first end is opened in the straight outer surface (16) and a second end is opened in the inclined inner surface (17) respectively, and the second end faces the relay opening (41; Figs. 3(a), 3(b), 4; paragraphs [0019], [0060], [0079]-[0081]).

Pending claim 9 requires the clamping apparatus as discussed above with respect to claim 8 and further includes a plurality of fluid flow holes (38) provided circumferentially (38; Figs. 3(a), 3(b), 4; paragraphs [0018], [0078], [0080], [0082], [0083]).

The fluid passage (40) is communicatively connected to a groove (42; Figs. 3(a), 3(b), 4; paragraphs [0079]-[0081]) formed along a circumferential direction in at least either the inclined outer surface (13) of the central pillar (12) or the inclined inner surface (17) of the intermediate member (15), and each second opening of the fluid flow holes (38) on the inclined inner surface (17) side faces the groove(42; Figs. 3(a), 3(b), 4; paragraphs [0019], [0060], [0079]-[0081]).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 1 and 6-9 are rendered obvious under 35 U.S.C. § 103(a) by the proposed combination of U.S. patent no. 4,059,036 (*Hartley*), U.S. patent no. 5,168,623 (*Rabe*), and U.S. patent no. 6,527,266 (*Yonezawa et al.*).

## VII. ARGUMENT

As discussed in detail below, the basis for the final rejection of claims 1 and 6-9 does not satisfy the requirements of *prima facie* obviousness of the subject matter recited in the rejected claims. Therefore, reversal of the rejection of claims 1 and 6-9 is respectfully requested.

### A. Claim Rejections

Claims 1 and 6-9 in this application are rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed combination of U.S. patent no. 4,059,036 (*Hartley*), U.S. patent no. 5,168,623 (*Rabe*), and U.S. patent no. 6,527,266 (*Yonezawa et al.*).

### B. Pertinent Law

In rejecting claims under 35 U.S.C. § 103(a), it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See *In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

The showings by the examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). For ease of review, the analysis used to make findings should be made explicit. See *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 U.S.P.Q.2d 1385, 1396 (2007) citing *In re Kahn*, 441, F.3d 977, 988, 78 USPQ2d 1329 (Fed. Cir. 2006) “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”.

If that burden is met, the burden then shifts to the applicant to overcome the *prima facie* case with argument and/or evidence. Obviousness is then determined on

the basis of the evidence as a whole. See *id.*; *In re Hedges*, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986).

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). It follows that all of the words recited in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). In particular, the question of whether the claimed invention as a whole would have been obvious, and not just whether the differences would have been obvious, must be addressed. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983).

The meanings of the claim terms of the pending claims are to be "given their broadest reasonable interpretation consistent with the specification." See *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005).

If the proposed change to the prior art device would render the device unsatisfactory for its intended purpose, then a person having ordinary skill in the art would not have a reason to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Further, if the proposed change or combination of the prior art would change the principle of operation of the prior art device being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

C. The proposed combination of the Hartley, Rabe, and Yonezawa patents does not amount to a *prima facie* case of obviousness with respect to claim 1

The discussion below is focused on the apparatus of independent claim 1. The dependent claims 6-9 stand or fall with independent claim 1.

Reversal of the rejection of claim 1 is respectfully requested on the basis that the *Hartley*, *Rabe*, and *Yonezawa* patents, whether considered individually or collectively, fail to disclose or suggest every feature of the clamping apparatus according to claim 1.

As will be discussed below, the proposed combination of the *Hartley*, *Rabe*, and *Yonezawa* patents fails to disclose at least a pull member connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member, as required by pending claim 1.

As is also discussed below, in view of the specific construction of the internal member for supporting a hollow body described in the *Hartley* patent, a person having ordinary skill in the art would not have modified the structure thereof in the manner suggested in the Office action dated April 6, 2009, since the proposed modification would destroy the function of the internal member of the *Hartley* patent.

Accordingly, claim 1 is patentable in view of the proposed combination of teachings of the *Hartley*, *Rabe*, and *Yonezawa* patents, since the proposed combination of these references does not constitute a case of *prima facie* obviousness.

By way of review, pending claim 1 defines a clamping device that includes a central pillar projected from a reference member for insertion into a hole of a moveable member. The central pillar is provided with a tapered inclined outer surface that corresponds to an inclined inner surface of an intermediate member having a straight outer surface to fit an inner periphery of the hole. At least a part of the circumference of the intermediate member is allowed to deform in both an expanding and contracting direction. A pull member is axially movably inserted into the central pillar and is further connected to the intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member. A lock and release arrangement are provided to move the intermediate member via the pull member toward a base end for locking or toward a leading end for releasing. A fluid flow hole is opened in the straight outer surface of

the intermediate member and is closed by the inner peripheral surface of the hole when the straight outer surface of the intermediate member comes into close contact with the inner peripheral surface of the hole when the intermediate member is moved for locking.

According to pending claim 1, the pull member is connected to the intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member, so that the pull member can effectuate the locking and releasing of the intermediate member by pulling the intermediate member towards the base end or the leading end respectively, without backlash or relative axial movement between the pull member and the intermediate member.

In contrast to the structural configuration recited in pending claim 1, the *Hartley* patent fails to disclose a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member. On page 2, the Office action associates the split ring 2 with the intermediate member of claim 1, the rod 7, the second plug, and the second split ring 1 with the pull member of claim 1, and the plug 5 with the central pillar of claim 1. The split ring 2 is caused to expand via engagement with the plug 5 and via compression caused by retracting the rod 7, which is connected to a second plug 4, which contacts a second split ring 1, which contacts the split ring 2.

It is clear from the description in the *Hartley* patent that the rod 7 and the plugs 4, 5 are moved axially relative to the split rings 1, 2 in order to cause the split rings to expand and contract (col. 2, lines 54-57). This relative axial movement between the rod 7 and the plugs 4, 5 and the split rings 1, 2 is *necessary* for the internal member for supporting a hollow body to function properly. Without the relative axial movement between the rod 7 and the plugs 4, 5 and the split rings 1, 2, the split rings would not expand to contact the inner walls of the supported hollow body.

Thus, in contrast to pending claim 1, the *Hartley* patent specifically discloses a split ring 2 that is not connected to the plugs 4, 5 and rod 7 substantially at all times in a manner to prevent relative axial movement between the split ring 2 and the plugs 4, 5 and rod 7.

Further, in order for the device of the *Hartley* patent to properly function, the rod 7 and the plugs 4, 5 *must* move axially relative to the split ring 2 in order to cause the split ring to expand and contract (col. 2, lines 54-57). A modification to integrate the split ring 2 with the rod 7 and the plugs 4, 5 so that there is no relative axial movement therebetween would destroy the functional interrelationship of the parts such that the split ring 2 would no longer expand and contract. Thus, such a proposed change would destroy the intended function of the internal member of the *Hartley* patent for supporting a hollow body, since if the split ring cannot expand to contact the inner walls of the hollow body to be supported, no support can be provided to the hollow body to be supported.

The failure of the *Hartley* patent to disclose a split ring 2 that is connected to the plugs 4, 5 and rod 7 substantially at all times in a manner to prevent relative axial movement between the split ring 2 and the plugs 4, 5 and rod 7 is acknowledged in the Office action on page 2.

The Office action on page 2 takes Official Notice that component construction and integral construction are well known assembly techniques. However, even assuming that integral construction is a well known assembly technique, as discussed above, a person having ordinary skill in the art would not have provided an integral construction of the split ring 2 and the plugs 4, 5 and rod 7, since such a change would destroy the intended function of the internal member of the *Hartley* patent of supporting a hollow body by expanding the split ring 2, by relative axial movement, so that the split ring 2 engages the inner walls of the supported hollow body.

The Office action also turns to the *Rabe* patent to cure this deficiency of the *Hartley* patent. Specifically, on page 2, the Office action states that the *Rabe* patent teaches in Fig. 5 "that there is no axial movement between the pull member 17, 16

and intermediate member 18." Here the Office action equates the collet member 16 and the rear flange 17 of the collet member of the *Rabe* patent to the pull member 21 of the pending application and the expandable jaws 18 of the collet member 16 of the *Rabe* patent to the intermediate member 15 of the pending application.

The above statement in the Office action is inaccurate for at least two reasons. Firstly, as will be recognized by any person having ordinary skill in the art, the only structure in the *Rabe* patent that may be considered equivalent to a pull member is the piston 19 and the piston rod 20, and not the collet member 16 and the rear flange 17 of the collet member of the *Rabe* patent.

With this understanding of the *Rabe* patent, which is apparent to a person having ordinary skill in the art, it can be seen that the *Rabe* patent thus discloses relative axial movement between the piston 19 and the piston rod 20 (pull member) and the expandable jaws 18 of the collet member 16 (intermediate member). This configuration is in clear contrast to pending claim 1, which requires a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member.

Secondly, even if the collet member 16 and the rear flange 17 of the collet member of the *Rabe* patent are considered to be a pull member, the configuration of the collet member 16 and the rear flange 17 and the expandable jaws 18, requires relative axial movement between the components to some degree.

This can be seen by a comparison of Figs. 3 and 4 of the *Rabe* patent. In particular, while the thin long section (unlabeled) connecting the collet member 16 and the expandable jaws 18 is straight in Fig. 3, the same section is deformed in the radial direction in Fig. 4. Thus, there is clearly some relative axial movement between the collet member 16 and the expandable jaws 18 since the distance therebetween is shortened due to the deformation of the thin long section.

For at least these two reasons, the *Rabe* patent fails to disclose a pull member that is connected to an intermediate member substantially at all times in a manner to

prevent relative axial movement between the pull member and the intermediate member.

Accordingly, the proposed combination of the *Hartley* and *Rabe* patents fails to disclose a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member.

Further, as discussed above in detail a person having ordinary skill in the art would not have provided the internal member of the *Hartley* patent with the proposed integral construction of the split ring 2 and the plugs 4, 5 and rod 7, since such a change would destroy the intended function of the internal member of the *Hartley* patent of supporting a hollow body by expanding the split ring 2, by relative axial movement, so that the split ring 2 engages the inner walls of the supported hollow body.

The Office action turns to the *Yonezawa* patent for combination with the *Hartley* and *Rabe* patents. However, as is shown in Figs. 2-5 of the *Yonezawa* patent, the shuttle member 23 is also not connected to the pull member 31, since the shuttle member 23 is separated from the pull rod 31 by the plug portion 21, and the shuttle member 23 further moves axially with respect to the pull member 31, which is in contrast to pending claim 1, which requires a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member.

Thus, none of the *Hartley*, *Rabe*, and *Yonezawa* patents discloses a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member, as is required by pending claim 1. Since this structure is not disclosed in any of the *Hartley*, *Rabe*, and *Yonezawa* patents, it follows that the proposed combination of the *Hartley*, *Rabe*, and *Yonezawa* patents will also fail to disclose this structure.

Therefore, since the proposed combination of the *Hartley*, *Rabe*, and *Yonezawa* patents fails to disclose a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member, as is required by pending claim 1, a *prima facie* case of obviousness cannot be established, and reversal of this rejection is respectfully requested.

Further since the configuration of the device of the *Hartley* patent *must* use relative axial movement between the rod 7, the plugs 4, 5 and the split ring 2 in order to cause the split ring to expand and contract to support a hollow body, which is the intended purpose of the internal member of the *Hartley* patent, as discussed above in detail, it would not have been obvious for a person having ordinary skill in the art to modify the device of the *Hartley* patent to have a pull member that is connected to an intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member, as is required by pending claim 1, since such a modification would destroy the function of the device of the *Hartley* patent for supporting a hollow body, since if the split ring cannot expand to contact the inner walls of the hollow body to be supported, no support can be provided to the hollow body to be supported.

Accordingly, since a person having ordinary skill in the art would not have modified the device of the *Hartley* patent to have a split ring connected to the rod intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member, as is required by pending claim 1, a *prima facie* case of obviousness cannot be established, and reversal of this rejection is respectfully requested.

The remaining pending claims 6-9, which depend from claim 1, contain all of the elements of claim 1, as well as their respective recited features. Accordingly, since the proposed combination of the *Hartley*, *Rabe*, and *Yonezawa* patents fails to establish a *prima facie* case of obviousness with respect to claim 1, the proposed combination of the *Hartley*, *Rabe*, and *Yonezawa* patents fails to establish a *prima*

*facie* case of obviousness with respect to claims 6-9, and reversal of this rejection is respectfully requested.

**VIII. Conclusion**

For the reasons set forth above, claims 1 and 6-9 of the pending application define subject matter that is not rendered *prima facie* obvious within the meaning of 35 U.S.C. § 103(a) by the proposed combination of the *Hartley*, *Rabe*, and *Yonezawa* patents.

Reversal of the rejection of claims 1 and 6-9 is respectfully requested.

The Fee required by 37 C.F.R. § 1.17(c) is submitted herewith. The Office is authorized to charge any additional fees associated with this communication to Deposit Account No. 02-0200.

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Application No.: 10/567,562  
Brief on Appeal

**IX. CLAIMS APPENDIX**

Claim 1. A clamping apparatus, wherein

a central pillar is projected from a reference member so as to be inserted into a hole opened in a movable member,

the central pillar is provided with an inclined outer surface that tapers toward a leading end of the central pillar,

an annular intermediate member defining a circumference in which at least a part of the circumference is allowed to deform in both an expanding direction and a contracting direction is arranged at the outside of the inclined outer surface, the intermediate member is provided with a straight outer surface allowed to fit to an inner peripheral surface of the hole and with an inclined inner surface facing the inclined outer surface,

a pull member is axially movably inserted into the central pillar, and the pull member is connected to the intermediate member substantially at all times in a manner to prevent relative axial movement between the pull member and the intermediate member,

a lock arrangement and a release arrangement are provided in the reference member, the lock arrangement moves the intermediate member via the pull member toward a base end for locking and the release arrangement moves the intermediate member via the pull member toward the leading end for releasing,

a fluid flow hole is opened in the straight outer surface of the intermediate member, and when the intermediate member moves for locking and the straight outer

surface comes into close contact with the inner peripheral surface of the hole, the fluid flow hole is closed by the inner peripheral surface of the hole.

Claim 6. A clamping apparatus as set forth in claim 1, wherein  
a plurality fluid flow holes is provided.

Claim 7. A clamping apparatus as set forth in claim 6, wherein  
the plurality of fluid flow holes is provided circumferentially.

Claim 8. A clamping apparatus as set forth in claim 1, wherein  
a housing provided in the reference member is provided with a fluid port for  
supplying pressurized fluid or discharging fluid,  
a fluid passage is provided inside the housing and the fluid passage is  
connected to the fluid port,  
the fluid passage is provided with a relay opening in the inclined outer surface  
of the central pillar, and  
the fluid flow hole is provided so that a first end is opened in the straight outer  
surface and a second end is opened in the inclined inner surface respectively, and the  
second end faces the relay opening.

Claim 9. A clamping apparatus as set forth in claim 8, wherein  
a plurality of fluid flow holes is provided circumferentially,

the fluid passage is communicatively connected to a groove formed along a circumferential direction in at least either the inclined outer surface of the central pillar or the inclined inner surface of the intermediate member, and

each second opening of the fluid flow holes on the inclined inner surface side faces the groove.

**X. EVIDENCE APPENDIX**

There are no copies of evidence entered and relied upon in this appeal  
of the pending application.

**XI. RELATED PROCEEDINGS APPENDIX**

There are no related proceedings or decisions rendered by a court or the Board of Appeals in any proceeding identified in the related appeals and interferences section in the pending application.